



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D212-664-201
Job Sheet 170235

000570



Part No: D212-664-201

Job Qty: 1 ea

Part Name: Aft Crosstube - High



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/12/18

Job Tracking No:

Due Date: 1/19/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG DSI9563 REV B, D212-664-241 REV E IPP Rev:E 04.02.16 Reformat K/DS IPP Rev:F 06-03-29
Remove Comments on Pick List JLM IPP Rev:G 07-04-30 As per Rev C JLM IPP Rev:H 08-05-22 up date Qty of
rubber cushion DD ver:EC IPP Rev:I 14.05.27 AS PER ECN14-570 DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	1/18/18	1/18/18	0.00	0.00	Start Up Crosstubes-1		DPZ
110	Packaging	1 pcs	1/18/18	1/18/18	0.00	0.00	Packaging1-3		DPZ
120	CNC Bend Crosstubes	1 pcs	1/18/18	1/18/18	0.00	4.44	CNC Bend Crosstube		DPZ GP
130	QC	1 pcs	1/18/18	1/18/18	0.00	0.00	QC15		38
140	Crosstubes	1 pcs	1/18/18	1/18/18	0.00	4.99	Crosstubes-1		DPZ
150	HandFXtube	1 pcs	1/18/18	1/18/18	0.00	1.25	HandFinish5		DPZ
160	QC	1 pcs	1/18/18	1/18/18	0.00	0.00	QC7-1		18-01-22
170	QC	1 pcs	1/18/18	1/18/18	0.00	0.00	QC5		18-01-22
180	Outsource	1 pcs	1/18/18	1/18/18	0.00	0.00	Outsource2		18-01-27
190	Packaging	1 pcs	1/18/18	1/18/18	0.00	0.00	Packaging2		18-01-31
200	QC	1 pcs	1/18/18	1/18/18	0.00	0.00	QC5		18-01-31
210	SprayPaint	1 pcs	1/18/18	1/18/18	0.00	1.47	Spray Paint		18-01-31
220	QC	1 pcs	1/18/18	1/18/18	0.00	0.00	QC14		18-01-31
230	Crosstubes	1 pcs	1/19/18	1/19/18	0.00	1.47	Crosstube		18-01-31
240	QC	1 pcs	1/19/18	1/19/18	0.00	0.00	QC5		18-01-31
250	Packaging	1 pcs	1/19/18	1/19/18	0.00	0.00	Packaging1-3		18-01-31
260	QC	1 pcs	1/19/18	1/19/18	0.00	0.00	QC4		18-01-31
265	DC	1 pcs	1/19/18	1/19/18	0.00	0.00	DC		18-01-31
270	Packaging	1 pcs	1/19/18	1/19/18	0.00	0.00	Packaging3-1		18-01-31
280	QC21-FG	1 Ea	1/19/18	1/19/18	0.00	0.00	QC21		18-01-31

Part Op 120 - ***VERF SET-UP BEFORE BENDING BY: *** Bend tube as per Dwg D212-664-241 using

Descriptions: CNC bender program 212-aft

140 - 1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550, DT8551, drill table DT8577 and locate tower holes #8 as per QSI0010. 2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241 4- ***WEAR LATEX GLOVES HANDLING CROSSTUBE.*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

150 - ***IMMEDIATELY AFTER GRINDING***

180 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Issue P/O: _____

190 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***

200 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Inspect for damage & ensure results are as per Dwg D212-664-241

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Primer 138646 clear P.O 38689

220 - Then, Wrap in plastic bag to protect from scratches Paint 138686

DART
AEROSPACE
S0333341

Aft Crosstube - High



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

PART NO:
Original NO:
Revision: D212-664-201
Operation: S0333341
Change No:

Start up Operation
CHG006

Job No: 170235
01/18/18

230 - *****LAY DOWN CORSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP, USE HOLE IN TAPE MESURE TO PUT IN PINS FOR LOCATING CENTER OF CROSSTUBE. ***** 1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg 2- Install supports with Proseal 890 per D212-664-241 and QSI 015 A/R Proseal 890 Batch: 138700 EXP: 5/19
 PROSEAL CURE TIME 72 HOURS: Start: 18-02-31 Finish: 18-02-02 3- Install clamps with rubber cushion (ENSURE CLAMPS ARE INSTALL ON TOP SIDE OF CROSSTUBE) using DT9565 as per Dwg D212-664-241. ***Torque all clamps to 80-100 IN-LBS.***
 240 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***
 260 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 265 - Photocopy bluefile and create labels as per PPP D212-664-201 CHG006
 270 - Identify and pack for shipping as per PPP D212-664-201 Location : FG098

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation <u>149728</u>	D212-664-201TRN	1	8	0	0
250-Packaging	AN6-40A	4	112	0	0
	AN6-41A	2	46	0	0
	D3428-1	1	15	0	0
	MS21042L6	6	354	0	0
	NAS1149D0663J	18	1,371	0	0

Part Specifications

Specifications could not be found.

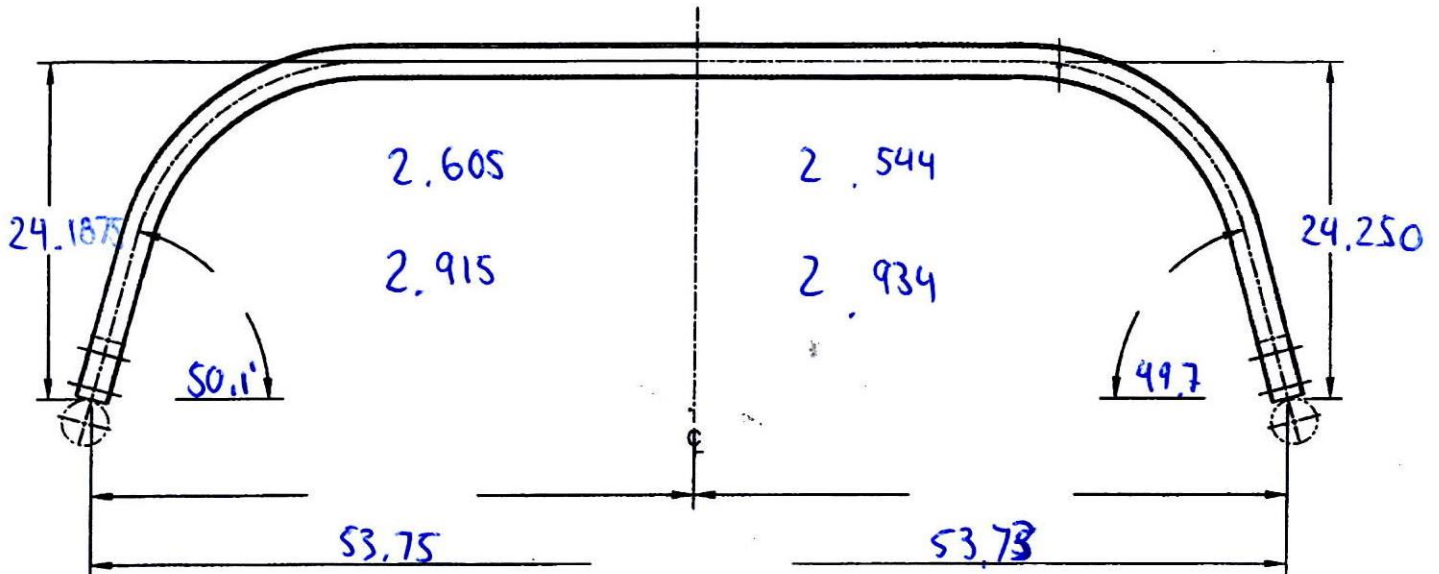
D2940-1 5004633 (2)
 D3595-063-530 5007097 (4)
 MS21920-28 M138471 (4)
 166

Plex 1/12/18 7:55 AM Dart.lajeunesse.marie

Handwritten signature and notes:
 "J'ai issue les Traps"
 "Miles je ne fais pas l'acier"

DART AEROSPACE LTD	Work Order: 170235
Description: Crosstube High Aft (205/212)	Part Number: D212-664-201
Inspection Dwg: D212-664-241 Rev: E	Page 1 of 1

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	5	--
Crushing	--	7.2%



	Side A	Side B
Bending Passes	17	16
Crushing	5.6%	7.1%
Comments		

QC15 Inspection	DAS 38 9-88
Date	JAN 17 2018

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	
C	10.04.01	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.07.08	Crushing percentage revised	KJ	

Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-884-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-884-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2		D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6		2	D5018-1	SUPPORT
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
d) PAINT OUTSIDE PER DART QSI 005 4.2
e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-884-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: D212-884-241/-241B = 44.2 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R35.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

ASSEMBLY

- 13) INSTALL D2940-1 / D5018-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 14) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 170235 M.5
1801-12

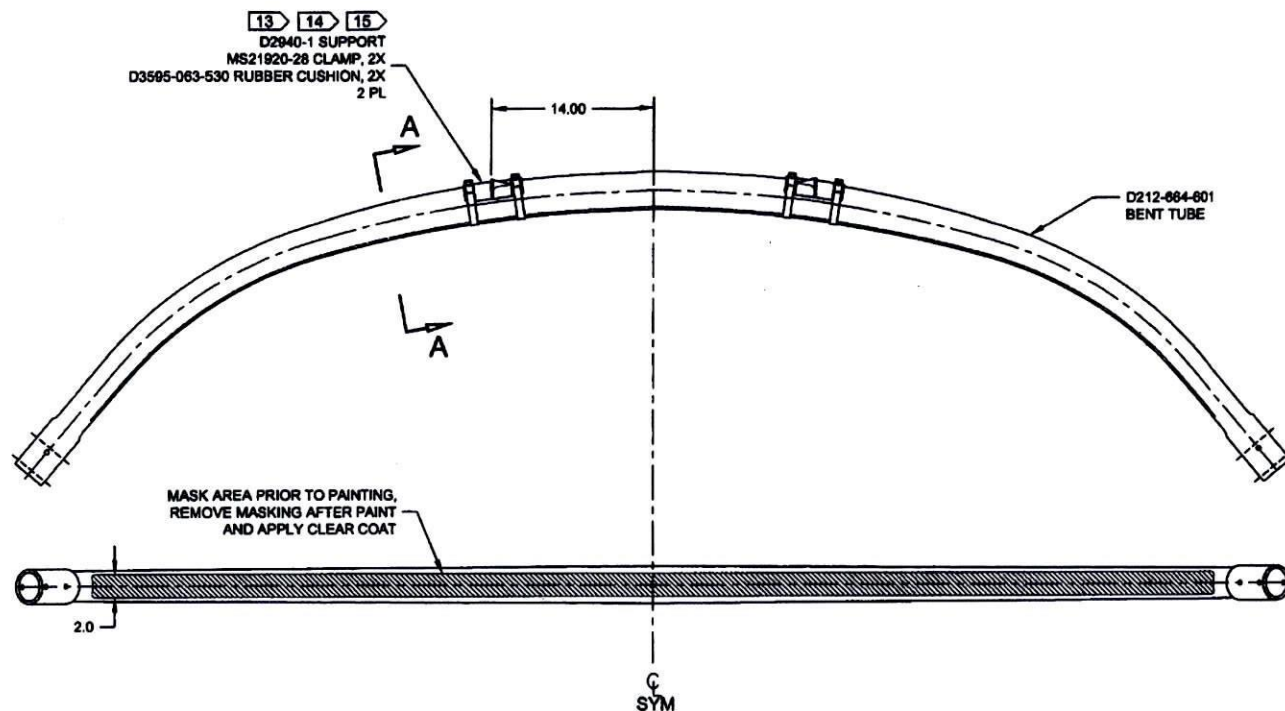
RELEASED
2014-05-26

E	D5018-1 WAS D2940-1 (-241B), PROSEAL WAS MAGNOBOND, NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% CRUSH, NOTE 15: ADD 72HR CURE AND RETORQUE FOR PROSEAL, ADD SHEET 3, CLAMPS REVERSED TO PREVENT CHAFING (ZN B7-2, B7-3), BEND HEIGHT TOL. NOW 0.25 WAS 0.13 (C1-4), INCORP DEO D-1/2	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST: REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A5-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1000 ABRASION STRIP; ADD MAGNOBOND 8306, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	14.04.01		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

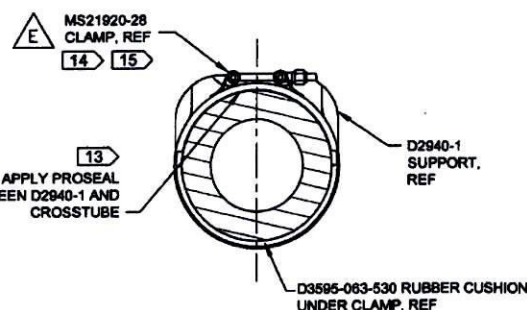
DRAWING NO. D212-884-241
REV. E
SHEET 1 OF 5
TITLE CROSSTUBE ASS'Y (205/212 HI AFT)
SCALE NTS

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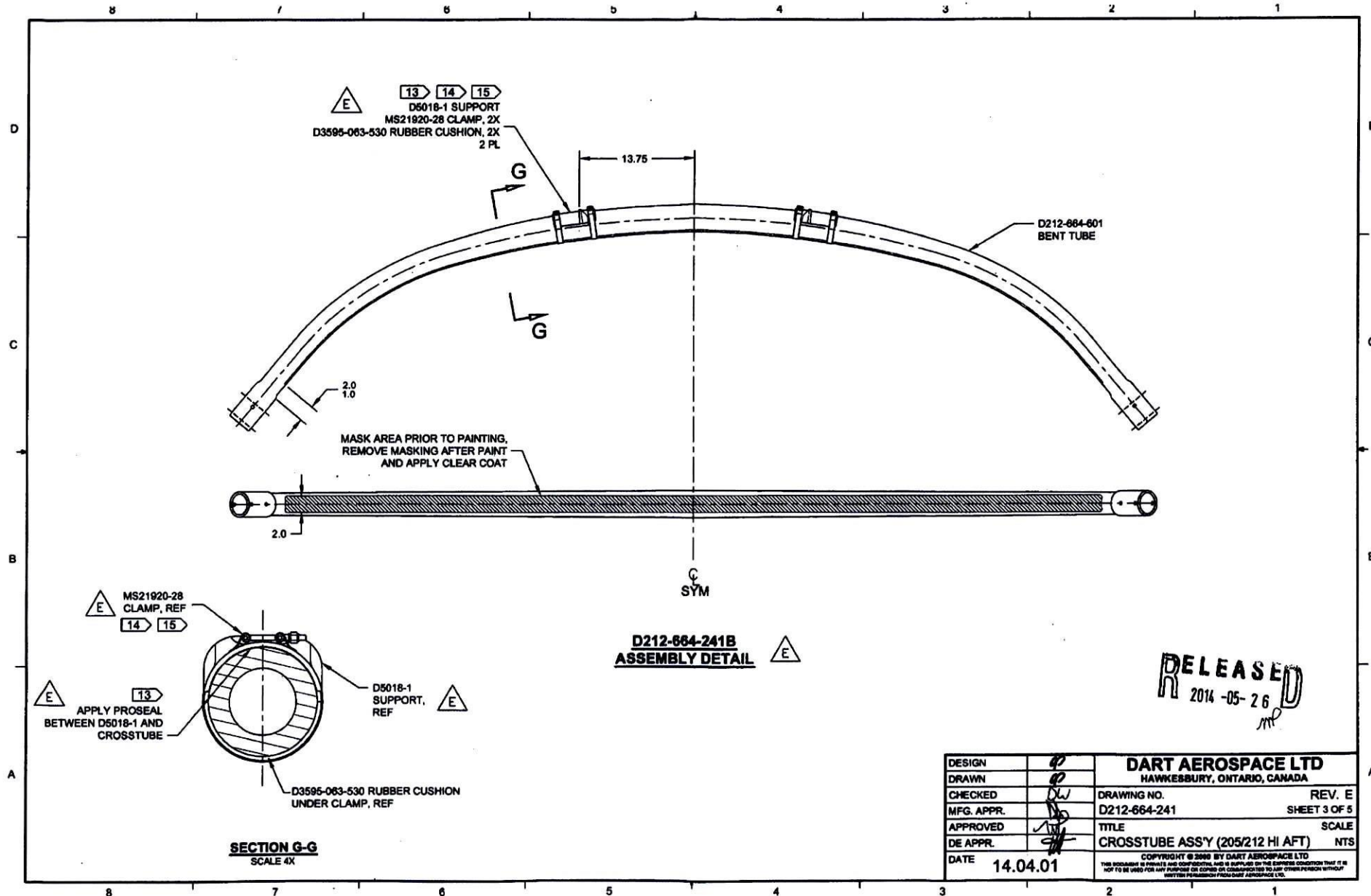
**D212-864-241
ASSEMBLY DETAIL**

RELEASED
2014-05-26



**SECTION A-A
SCALE 4X**

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D212-864-241	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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2014-05-26

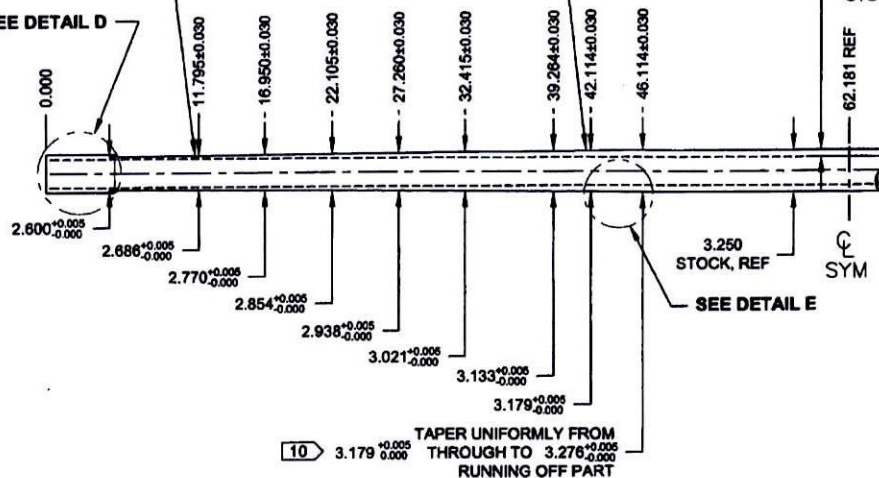
DESIGN	<i>Q</i>	DART AEROSPACE LTD	
DRAWN	<i>Q</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Q</i>	DRAWING NO.	REV.
MFG. APPR.	<i>Q</i>	D212-664-241	SHEET 3 OF 5
APPROVED	<i>Q</i>	TITLE	SCALE
DE APPR.	<i>Q</i>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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R100.0 TRANSITION
BETWEEN TAPERED
SECTIONS

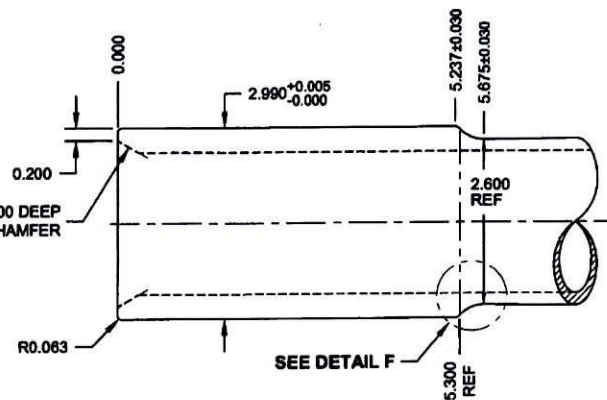
R100.0 TRANSITION
BETWEEN TAPERED
SECTIONS

0.515 WALL
STOCK, REF

SEE DETAIL D

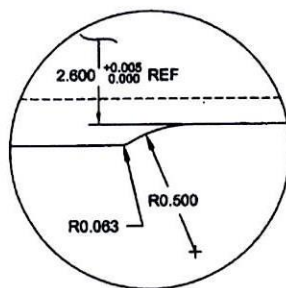


10
30° X 0.500 DEEP
CHAMFER

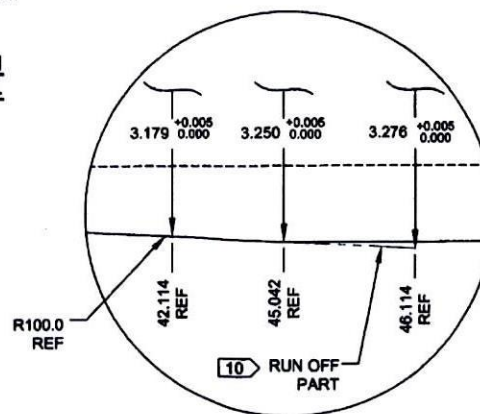


DETAIL D:
CROSSTUBE CUFF
SCALE 5X

D212-664-241TRN
TURNING DETAIL



DETAIL F:
CUFF TRANSITION
SCALE 10X



DETAIL E:
TAPER RUN-OFF
NOT TO SCALE

RELEASED
2014-05-26

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D212-664-241	REV. E
MFG. APPR.			SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038831

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO038831
PO Date: 1/22/18
Due Date: 1/25/18
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

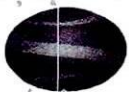
Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items											
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price	
1	167186	D4883-7	End Fitting Outsource process - NDT per QSI038 4.1 Issue P/O: _____ LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required.	Firmed	1/25/18	10 pcs	0 pcs	10 pcs	\$55.1429/pcs	\$551.43	
2	167164	D4885-3	End Fitting ISSUE P/O : _____ LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417	Firmed	1/25/18	8 pcs	0 pcs	8 pcs	\$55.1429/pcs	\$441.14	
3	169544	D4464-041	Fuel Tank Assembly ISSUE P/O : _____ LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2	Firmed	1/25/18	1 pcs	0 pcs	1 pcs	\$55.1429/pcs	\$55.14	
4	168063-C	D212-664-201	Aft Crosstube - High ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Issue P/O: _____ LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2	Firmed	1/25/18	1 pcs	0 pcs	1 pcs	\$55.1429/pcs	\$55.14	
5	170235	D212-664-201	Aft Crosstube - High ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Issue P/O: _____ LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2	Firmed	1/25/18	1 pcs	0 pcs	1 pcs	\$55.1429/pcs	\$55.14	
Grand Total:										\$1,158.00	

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report

18/01/27 mzf

**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO34719	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO038831
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON:

2 AFT CROSSTUBES, P/N# D212-664-201 , J/S# 168063-C, 170235 ✓

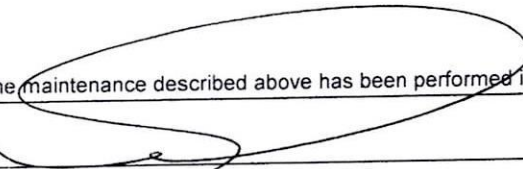
1 FUEL TANK ASSY, P/N# D4464-041 , J/S# 169544 ✓

8 END FITTING, P/N# D4885-3 , J/S# 167164 ✓

10 END FITTING, P/N# D4883-7 , J/S# 167186 ✓

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , DEV. MPO11715 , UV LIGHT M-20142						JAN 23 2018	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: JAN 23 2018
Name: RAFIK MELIKIAN		



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Master Unit 000570

Tel (613) 632-5200

Containers on Master Unit 000570				
Serial No	Part No	Customer Part No	Status	Quantity
S039721	AN6-40A		Allocated	4
S039720	AN6-41A		Allocated	2
S039719	D3428-1		Allocated	1
S039718	MS21042L6		Allocated	6
S039716	NAS1149D0663J		Allocated	18